# Cool, Clear Water

## 2015 WATER QUALITY REPORT

**CITY OF DURHAM** DEPARTMENT OF WATER MANAGEMENT

DURHAM
1869
CITY OF MEDICINE

"LIKE ME, I GUESS, HE'D LIKE TO REST WHERE THERE'S NO QUEST FOR WATER, COOL, CLEAR WATER."

*COOL WATER*, BOB NOLAN

# Contents

# From the Director

## DURHAM POSTS ZERO WATER QUALITY VIOLATIONS AGAIN IN 2015

Clean, safe drinking water is our most precious natural resource – vital for cooking, drinking and cleaning, a competitive advantage for attracting many industries and desirable for recreation and play.

Yet few of us spend any time worrying about it unless drought strikes, our plumbing springs a leak or a community water system failure makes national news.

> "WE'RE DELIGHTED TO REPORT, ONCE AGAIN, THAT THE CITY OF DURHAM'S TAP WATER HAD NO VIOLATIONS OF ANY WATER QUALITY STANDARDS DURING THE PAST YEAR."

Our job is to ensure you don't have to, and this 2015 Water Quality Report highlights how we do that.

We're delighted to report, once again, that **the City of Durham's tap water had no violations of any water quality standards during the past year**. All substances detected in your drinking water were well below levels allowed by the U.S. Environmental Protection Agency (EPA) during 2015.

In addition, your Department of Water Management:

- **Delivered 26.53 million gallons of water a day** to residential and commercial customers. We monitor and analyze your water every day to ensure it meets or surpasses all federal and state standards for purity.
- **Modernized and streamlined customer service systems**, in partnership with other City departments, and selected a vendor to install our new interactive voice response system in 2016. These improvements set the stage for billing by email to begin next year.
- **Upgraded aging water infrastructure** in some areas of the city while expanding capacity and service in others. Our system of treatment plants, storage tanks, pumps and pipelines purifies and distributes water for your use.
- **Planned ahead to meet growing demand**, developing master plans for rehabilitating Lake Michie and Little River Reservoir dams and studying how best to develop a regional intake system that will add water capacity from Jordan Lake.
- **Hosted a wide range of conservation initiatives** that, in partnership with you, help preserve our water resources.

Read more about your water system's operations and improvements in the pages ahead.

By conserving, managing and using our water resources wisely, we in Durham can continue sharing and enjoying our "cool, clear water" in the years ahead.

**Don Greeley**
Director, Department of Water Management

EPA WaterSense PARTNER

**CITY OF DURHAM DEPARTMENT OF WATER MANAGEMENT**
The Department of Water Management, guided by the City's and Department's strategic plans, provides Durham residents and businesses with cost-effective water and wastewater services that meet customer's expectations and all regulatory requirements.

durhamnc.gov/944

# Managing Durham's Drinking Water

## WHERE IT COMES FROM. HOW IT'S TREATED.

Drinking water – both tap and bottled – comes from rivers, lakes, streams, ponds, reservoirs, springs and wells.

As this water travels over land or through the ground, minerals and other materials naturally dissolve into it. As it moves through our environment, water can also pick up substances that are the result of animal or human activity.

Source water may contain:

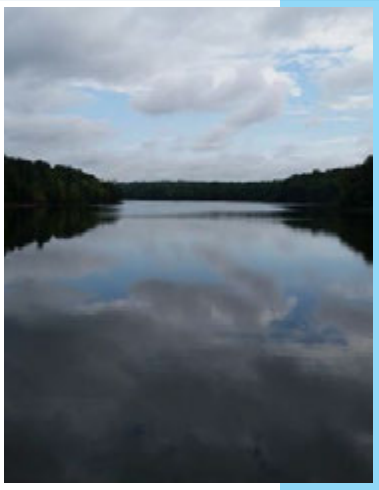
- Microbial contaminants, such as viruses and bacteria.
- Inorganic contaminants, such as salts and metals.
- Pesticides and herbicides from agriculture or urban run-off.
- Organic chemicals from industrial processes or run-off.
- Radioactive contaminants that can occur naturally.

The EPA regulates the amount of certain substances in your tap water. This is to ensure that tap water is safe to drink. The U.S. Food and Drug Administration establishes limits for contaminants in bottled water to protect public health.

## FOUR SOURCES ENSURE ABUNDANT DRINKING WATER

Durham residents and businesses use, on average, nearly 27 million gallons of water a day (MGD). We're fortunate to have two high-quality surface water sources to meet that demand: Lake Michie, built in 1926, and Little River Reservoir, built in 1988.

City water managers use modelling to determine the amount of water that can be taken from the two lakes. Accounting for the extreme drought conditions of 2007-2008 and a 20 percent safety factor, these two sources safely yield 27.9 MGD.



Plans are being developed to tap two additional water sources – Teer Quarry and Jordan Lake – to meet demand now and in the future.

Teer Quarry first provided emergency supplemental water for the City during the height of the drought in 2007-2008. The City purchased the abandoned quarry in 2004 and is in the planning phase of a project to build permanent facilities that will allow the quarry to refill from a number of sources during normal conditions and provide a reliable emergency water source for the City.

### THIRSTY? DRINK DURHAM TAP WATER INSTEAD OF BOTTLED

City tap water:

- Meets all federal and state quality standards
- Reduces environmental impact (no discarded plastic bottles)
- Saves you money

*"...There is no assurance that bottled water is cleaner or safer than tap. In fact, an estimated 25 percent or more of bottled water is really just tap water in a bottle—sometimes further treated, sometimes not."*

"The Truth About Tap"
National Resources Defense Council
January 5, 2016

DrinkTap.org

### DURHAM DRINKING WATER SOURCES

Lake Michie
Little River Reservoir
Teer Quarry
Jordan Lake

Jordan Lake, another local, high-quality water source, has provided as-needed water for the City via the Town of Cary's water system since 2002, when we obtained an allocation of approximately 10 MGD.

The City applied for an additional 6.5 MGD allocation in November 2014 to meet projected water demand through 2060. Once the N.C. Environmental Management Commission approves the request, the City will explore collaborations with neighboring water agencies to build infrastructure that will bring water from Jordan Lake into our system.

## TWO TREATMENT PLANTS PROVIDE CLEAN, SAFE DRINKING WATER

Water moves from Durham's two supply lakes to its two City treatment plants – Williams and Brown – by gravity flow, hydropower and electric power. On-site reservoirs at each plant hold a two- to three-day supply of water that helps even out the pumping strategy.

In 2015, Durham's two plants provided 26.53 MGD of water to approximately 270,844 people in the City and County:

- Williams Water Treatment Plant on Hillandale Road, built in 1917, has been upgraded a number of times and its capacity expanded to 22 MGD.
- Brown Water Treatment Plant on Infinity Road, built in 1977, provides 30 MGD of capacity.

Both plants use conventional water treatment processes. The initial treatment step is coagulation, which involves the rapid mixing of caustic and ferric sulfate into the untreated source water. Next, the water flows into chambers where gentle mixing allows dirt and other impurities to stick together, or flocculate. Heavy floc particles are formed that then settle and are removed in sedimentation basins. Chlorine is added to the settled water as a disinfectant. The water then flows through sand and anthracite filters to remove any remaining particles. Phosphate (which keeps pipes from corroding) and fluoride (for dental health) are then added. In the final step, chlorine and ammonia are combined to form chloramines, a disinfectant that will stay in the water to keep it disinfected until it gets to your tap.

The City of Durham has added fluoride to its drinking water since 1957 to promote dental health. Until recently, state regulations required a target concentration of 1.0 mg/l for fluoride. However, in 2011, the EPA and Centers for Disease Control determined that dental health could be maintained with lower levels of fluoride. Based on this, N.C. regulators have allowed water systems to decrease their fluoride target levels to 0.7 mg/l. The City changed dosage levels for fluoride immediately upon receiving approval. Testimony from public health experts supports the continued addition of fluoride to drinking water as an ongoing safeguard for dental health.

# 2015 Water Quality Testing Results

## CONTAMINANTS TESTING: 100% COMPLIANCE

The City of Durham (Public Water System ID # 03-32-010) routinely monitors more than 150 contaminants in your drinking water, in accordance with federal and state laws. The table below lists all the regulated drinking water contaminants that were detected during testing conducted from Jan. 1-Dec. 31, 2015. It shows that all substances were found to be within acceptable levels during 2015. Note: EPA and the state require water providers to monitor for certain contaminants less than once per year because the concentrations of those contaminants are not expected to vary significantly from year to year. Thus, some of the data, while representative of water quality, is more than one year old.

| Substance and Unit of Measurement | Level Detected and Range | Violation Yes/No | Max. Level Allowed (MCL) | Ideal Goal (MCLG) | Potential Source(s) of Substance |
|---|---|---|---|---|---|
| Monitored at the Treatment Plants | | | | | |
| Chloramines mg/L (as Cl2) | 2.1 average | NO | MRDL 4.0 | MRDLG 4.0 | Water additive to control microbes |
| Chlorine mg/l | 2.1 average | NO | MRDL 4.0 | MRDLG 4.0 | Disinfectant to control microbes |
| Fluoride mg/L | 0.74 maximum (0.72–0.74) | NO | 4.0 | 4.0 | Naturally occurring mineral; added to promote dental health |
| Nitrate mg/L (as Nitrogen) | <0.24 average (< 0.10–0.37) | NO | 10.0 | 10.0 | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits |
| Turbidity NTU | 0.08 maximum (0.06–0.08) | NO | TT | N/A | Soil runoff |
| Turbidity, % of monthly samples ≤ 0.3 NTU | 100% | NO | 95% | N/A | Soil runoff |
| Total Organic Carbon, mg/l (TOC) Results show the range of TOC in both source and treated water. Durham's processes remove more than the required 50%. | Average removal 68% Source 7.21 (4.93–11.56) Treated 2.28 (1.69–3.55) | NO | NR | TT 50% removal | Naturally present in the environment |
| Alpha emitters, pCi/L Samples collected and analyzed - February 2008 | None detected no range | NO | 15 | 0 | Erosion of natural deposits |
| Beta/photon emitters, pCi/L Samples collected and analyzed - February 2008 | None detected no range | NO | 50 | 0 | Decay of natural and man-made deposits |
| Monitored at the Customer's Tap | | | | | |
| Copper, mg/L EPA-required triennial sampling conducted July-September 2013 | < 0.05 (90th percentile) | NO | AL=1.3 | 1.3 | Corrosion of household plumbing systems |
| Lead, mg/L EPA-required triennial sampling conducted July-September 2013 | <0.003 (90th percentile) | NO | AL=0.015 | 0 | Corrosion of household plumbing systems |
| Monitored in the Distribution System | | | | | |
| Total Coliform Bacteria (presence or absence) | 3% maximum (0-3%) | NO | 5% of monthly samples are positive | 0% positive | Naturally present in the environment |
| Fecal Coliform or *E. coli* (presence or absence) | 0 | NO | 0 | Note: The MCL is exceeded if a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive | Human and animal fecal waste |

## DISINFECTION BY-PRODUCTS TESTING: 100% COMPLIANCE

Durham samples and tests drinking water from selected, state-approved locations across the city every quarter to ensure disinfection by-products remain within acceptable levels. This table shows that all by-products were found to be within acceptable levels during 2015.

| Stage 2 Disinfection Byproduct Compliance — Based on Locational Running Annual Average (LRAA) | | | |
|---|---|---|---|
| Five Haloacetic Acids By-product of drinking water disinfection MCL – 60 µg/L MCLG – 0 µg/L | Average Level Detected and Range (µg/L) | Total Trihalomethanes By-product of drinking water disinfection MCL – 80 µg/L MCLG - 0µg/L | Average Level Detected and Range (µg/L) |
| EP1 | 25 (20–29) | EP1 | 45 (28–48) |
| EP2 | 23 (16–29) | EP2 | 35 (21–47) |
| B01 | 25 (21–27) | B01 | 47 (29–49) |
| B02 | 26 (22–32) | B02 | 46 (29–52) |
| B03 | 27 (23–33) | B03 | 44 (30–53) |
| B04 | 27 (24–32) | B04 | 42 (31–53) |
| B05 | 26 (22–30) | B05 | 43 (30–52) |
| B06 | 31 (21–44) | B06 | 44 (20–50) |
| B07 | 26 (20–32) | B07 | 44 (29–50) |
| B08 | 24 (17–29) | B08 | 35 (24–42) |
| B09 | 23 (16–29) | B09 | 43 (29–51) |
| B10 | 28 (22–37) | B10 | 44(32–52) |
| B11 | 24 (19–28) | B11 | 33 (22–41) |
| B12 | 24 (21–30) | B12 | 41 (30–50) |
| No violations this period. | | | |

## KEY TO ABBREVIATIONS AND TERMS

**<** less than
**µg/L** micrograms per liter, or parts per billion
**AL** Action Level, concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow. Action Levels are reported at the 90th percentile for homes at greatest risk.
**LRAA** Locational Running Annual Average, average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfection Byproducts Rule
**MCL** Maximum Contaminant Level, highest level of a contaminant that is allowed in drinking water. NOTE: MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink two liters of water every day for a lifetime at the MCL level to have a one-in-a-million chance of experiencing the described health effect.
**MCLG** Maximum Contaminant Level Goal, level of a contaminant in drinking water below which there is no known or expected risk to health
**mg/L** milligrams per liter, or parts per million
**MRDL** Maximum Residual Disinfectant Level, highest level of a disinfectant allowed in drinking water
**MRDLG** Maximum Residual Disinfectant Level Goal, level of a drinking water disinfectant below which there is no known or expected risk to health
**N/A** not applicable
**ND** not detected
**NR** not regulated
**NTU** Nephelometric Turbidity Units, measure of the clarity or cloudiness in water
**pCi/L** picocuries per liter, measure of the radioactivity in water
**TT** Treatment Technique, required process intended to reduce the level of a contaminant in drinking water

## SOME ELEMENTS YOU MAY FIND OF INTEREST

| Substance and Unit of Measurement | Annual Average |
|---|---|
| pH, standard units (range) | 7.3–7.6 |
| Alkalinity, *mg/L* | 23 |
| Calcium, *mg/L* | 5.6 |
| Chloride, *mg/L* | 10.9 |
| Conductivity, *micromhos/cm* | 225 |
| Hardness - Calculated, *mg/L* | 24 |
| Hardness - EDTA, *mg/L* | 23 |
| Orthophosphate, *mg/L* (as PO4) | 1.00 |
| Potassium, *mg/L* | 2.08 |
| Sodium, *mg/L* | 33.1 |
| Sulfate, *mg/L* | 54.8 |
| Total Solids, *mg/L* | 128 |
| Zinc, *mg/L* | 0.29 |

## MONITORING VIOLATION ISSUED

The City received a Notice of Violation from the N.C. Department of Environmental Quality/Division of Water Resources in October 2015 for failure to collect upstream and downstream samples following a positive total coliform result collected during routine distribution system sampling. The City collects samples throughout the distribution system at specific locations approved by the state.

A sample collected on Sept. 30, 2015, from a public restroom sink tested positive for total coliform bacteria; these bacteria, naturally present in the environment, are used as an indicator that other potentially harmful bacteria may be present. Per procedure, staff resampled the tap in question the following day (Oct. 1, 2015) and collected additional samples that included another tap within the facility, as well as upstream and downstream samples. Upstream and downstream samples are tap water samples collected within five connections upstream and downstream of the site with the positive result.

At 24 hours, results from the upstream, downstream and additional interior site samples were negative; however the initial site was still positive. At that time, the establishment took steps to thoroughly disinfect the sink. An additional sample (at 48 hours) was collected at the sink, which was negative the following day. City staff failed to collect samples from the upstream and downstream connections at 48 hours, as required by state and federal law, resulting in the violation. Since then, the sites have consistently tested negative for coliforms.

View the supplement of this report at durhamnc.gov/946 to review the official public notice.

# Protecting Your Water From Contaminants

## WHAT EPA WANTS YOU TO KNOW ABOUT WATER AND CONTAMINANTS

Drinking water, including bottled water, can be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily mean that the water could be a health risk. Get more information about contaminants and potential health effects by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on the best ways to reduce the risk of infection by ***Cryptosporidium*** and other microbial organisms are available from the Safe Drinking Water Hotline at (800) 426-4791.

## WHAT THE CITY WANTS YOU TO KNOW ABOUT LEAD AND DRINKING WATER

The Department of Water Management places a high priority and monitors water quality 24/7/365 to ensure that your water supply does not contain corrosives that cause lead to leach into the water supply.

Here's what you should know about lead and drinking water and steps you can take to protect yourself.

**Elevated levels of lead can cause serious health problems**, especially for pregnant women and young children.

**Lead enters drinking water primarily due to the corrosion of materials** containing lead used in older household plumbing and service lines that are not managed carefully.

**There is no detectable lead in drinking water leaving Durham's two water treatment plants.** We replaced our lead service lines years ago and add a corrosion inhibitor to the drinking water. We also diligently monitor water quality to ensure appropriate levels of corrosion inhibitor are maintained.

**We test for lead and copper every three years**. Our last round of testing in 2013 found those elements well under action levels. Staff began our 2016 testing in June. We'll report and post results by mid-October.

### NO *CRYPTO* HERE

***Cryptosporidium* (*Crypto*)**, a microbial parasite that comes from animal waste, occurs naturally in rivers and lakes but can cause fever, diarrhea and other gastrointestinal symptoms when swallowed.

Controlling and minimizing development and animal activities in our watershed reduces the occurrence of *Crypto* in source water. The water treatment process of filtration, sedimentation and disinfection typically removes it.

The City began monthly testing for *Crypto* in fall 2006 (as per Long Term Two Enhanced Surface Water Treatment Rule, LT2SWTR) and **has never found the parasite in any monitoring event.**

**Anyone with concerns about lead in their own drinking water can have their water tested** and can take steps to minimize exposure, such as flushing tap water for 30 seconds to two minutes before using it for drinking or cooking. Call Durham One Call at (919) 560-1200 to request a water sample testing kit.

**Want more information on lead and drinking water?**

- Call EPA's Safe Drinking Water Hotline, (800) 426-4791
- Visit EPA's Website, epa.gov/safewater/lead
- Visit City's website, durhamnc.gov/944/Water-Management

## ASSESSING WATER SOURCE VULNERABILITY

The N.C. Department of Environmental Quality (DEQ) Public Water Supply Section, through its Source Water Assessment Program (SWAP), periodically assesses all drinking water sources in the state – wells and surface water intakes – to determine their susceptibility to potential contaminant sources (PCS).

PCSs include animal operations, septage disposal sites, old landfill sites, underground storage tanks and activities that could negatively impact water sources in Durham, Person and Orange counties — the watersheds of Lake Michie and Little River Reservoir.

The susceptibility rating is determined by combining a "Contaminant Rating," which is based on the number and locations of PCSs within the testing area, and "Inherent Vulnerability Rating," based on geologic, surface water and watershed features and conditions.

A susceptibility rating of "higher" indicates the system's potential to become contaminated by PCSs in the tested area, not the quality of the water. These findings help water managers identify areas and activities that may require monitoring or action.

The latest assessment results are summarized below.

## WATERSHED PROTECTIONS AT WORK

Comprehensive watershed protection ordinances developed by the City and County in the mid-1980s have helped maintain the high quality of both Lake Michie and Little River Reservoir.

Our plans provide buffers around the lakes and limit development density. Additionally, recreation programs allowed on the lakes are limited to ensure that drinking water remains their primary use.

In addition, in 2010, the City implemented a water rate policy that dedicates a penny per tier for watershed protection. These funds allow us to purchase additional buffer acreage around the lakes, as parcels become available.

Durham has spent $6.6 million over the past 18 years to purchase 2,607 acres for buffering around Lake Michie, and we're pursuing a $2.48 million purchase of 325 additional acres to protect our important water resources.

## SOURCE WATER ASSESSMENT PROGRAM RESULTS SUMMARY FOR DURHAM JULY 23, 2014

| Source Name | Inherent Vulnerability Rating | Contaminant Rating | Susceptibility Rating |
|---|---|---|---|
| Lake Michie | Lower | Higher | Moderate |
| Little River Reservoir | Lower | Higher | Moderate |

**View the full report at www.ncwater.org/pws/swap.**

**To obtain a printed copy:**

- Mail your request to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634
- OR email your request to swap@ncdenr.gov.

Please include the system name (City of Durham), PWSID (03-32-010) and your name, mailing address and phone number.

**Questions?**
Contact DEQ's Source Water Assessment staff at (919) 707-9098.

# Improving Water System Infrastructure

## THE DEPARTMENT OF WATER MANAGEMENT INVESTS MORE THAN A THIRD OF ITS REVENUES EACH YEAR ON CAPITAL IMPROVEMENT PROJECTS THAT UPGRADE WATER SYSTEM INFRASTRUCTURE AND FACILITIES TO ENSURE THEY OPERATE RELIABLY AND MEET GROWING DEMAND.

In 2015, the City invested $22 million on a range of improvements, including:

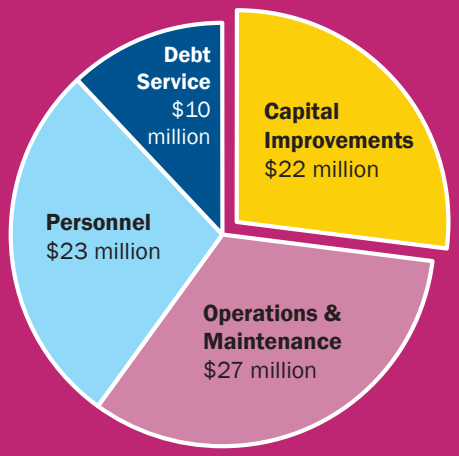
- Replacing more than 12,000 linear feet of deteriorating 1930s-era water mains in the Durham Downtown Loop area to improve service delivery.
- Completing the design to replace 1930s-era waterlines in the Durham Central Park area. Construction will begin in late 2016 and last approximately 18 months.
- Completing installation of waterlines and a 1.5 million gallon elevated storage tank along Page Road north of U.S. 70 and the Imperial Center area to improve water pressure for homes, businesses and fire protection.

In coming years, we plan these key projects to serve growing areas of the community and replace aging infrastructure:

- Upgrading both the Williams and Brown water treatment plants to meet regulatory requirements and expand treatment capacity at Brown from 30 to 42 MGD.
- Replacing two-inch water lines across the city with new, larger lines.
- Improving infrastructure in the American Tobacco District and areas east of Roxboro Street.

**Read more about our improvement projects at durhamnc.gov/971/Current-Projects.**

### FY 2015 BUDGET: $82 MILLION




Durham spends more than one-third of its water and sewer budget on capital improvements and related debt service.

# Conserving Our Water Resources

## RESIDENTIAL WATER USE

Average gallons per person per day

| | |
|---|---|
| **Durham** | 54 |
| **NC** | 70 |
| **US** | 98 |

Durham's residential water use consistently falls well below state and national averages.

## ENSURING THAT OUR WATER SUPPLIES LAST FOR FUTURE GENERATIONS IS A TOP PRIORITY, SO THE CITY TAKES SPECIFIC STEPS TO HELP RESIDENTS CUT BACK ON WATER USAGE WITHOUT SACRIFICING THEIR "WATER QUALITY OF LIFE."

Our efforts are paying off. **Durham's residential water use consistently falls below the national average**. Customer awareness, use of water efficient devices and fixtures, and programmatic incentives all play a part in inspiring water efficiency.

Two key initiatives are:


- **Toilet Rebate Program** – Toilets, on average, still account for nearly a quarter of the total water used in homes. Standard toilets use at least 1.6 gallons per flush. WaterSense®-labeled high-efficiency toilets (HETs) use at least 20 percent less than standard ones and can save the average family nearly 13,000 gallons of water every year. The City offers residential customers a $100 rebate for replacing water-wasting toilets with high-efficiency ones.

look for WaterSense Meets EPA Criteria

- **Save Water Kit** -- Pick up a Save Water Kit for $3 (from Cashiering at City Hall) and receive a water-efficient showerhead, aerators for your kitchen and bathroom sinks, and other useful items.

**For information on all of our conservation programs, visit DurhamSavesWater.org.**

## CONSERVATION BY THE NUMBERS

- 3,622 individuals reached through 34 public education events, including school presentations and community and neighborhood events
- 938 toilet rebates issued for an estimated annual savings of nearly 7.7 million gallons of water per year
- 825 water efficient faucet aerators provided
- 395 WaterSense® showerheads provided for an estimated annual savings of more than 1.2 million gallons of water per year
- 279 water use assessments completed

# Participate in City Decisions

**Notice Under the Americans with Disabilities Act**
Persons who require assistance should call (919) 560-4197, TTY (919) 560-1200, or email ADA@DurhamNC.gov no later than 48 hours before the event.

Are you interested in how decisions about Durham's water system or other City issues are made?

The public is welcome to attend regularly scheduled meetings of Durham's City Council, where water management and other City issues are discussed. Council meetings are held the first and third Monday of each month at 7 p.m. in the Council chambers on the first floor of City Hall.

City Council members also hold regular work sessions to prepare for Council meetings. These sessions occur on Thursdays — two weeks prior to each regular Council meeting – at 1 p.m. in the Council's Committee Room on the second floor of City Hall.

City Hall is located in downtown Durham at 101 City Hall Plaza.

Visit the City's website at www.durhamnc.gov to confirm meeting times, locations and agendas.

DURHAM 1869 CITY OF MEDICINE

**Department of Water Management**
City of Durham
101 City Hall Plaza
Durham, NC 27701

**Don Greeley**, Director

WATER USE IT WISELY

## QUESTIONS?

| | |
|---|---|
| Water quality report | (919) 560-4362 |
| Water conservation | (919) 560-4381 |
| Facilities tours | (919) 560-4381 |
| Billing and all other | (919) 560-1200 (Durham One Call) |

**Report a water main break or sewer overflow or backup**
Durham One Call (919) 560-1200

**durhamnc.gov/944**

/DurhamSavesWater /DurhamWater

BULL CITY BURGER AND BREWERY

**Water Keeps Our Economy Flowing**
Bull City Burger and Brewery in Durham, pictured here, for instance, uses City water for all of its locally brewed beers.

# NOTICE TO THE PUBLIC

## IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

### The City of Durham Drinking Water System Has Not Met Monitoring Requirements

***Dear Customer: We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the compliance period noted in the table below, we did not complete all monitoring or testing for the contaminants group listed and therefore cannot be sure of the quality of our drinking water during that time.***

| CONTAMINANT GROUP** | ENTRY POINT/ LOCATION CODE | COMPLIANCE PERIOD BEGIN DATE | SAMPLING FREQUENCY | WHEN SAMPLES WERE OR WILL BE TAKEN |
|---|---|---|---|---|
| Total coliform | S80 | September 1, 2015 | Weekly | Positive coliform sample collected 9/29/15; repeat samples were collected 9/30/15 and 10/1/15 |

**** See page 2 of this notice for the complete list of individual contaminants for each contaminant group**

**What should I do?** There is nothing you need to do at this time. The location was resampled at several taps within the site. The issue was isolated to one tap (a public restroom) at the site.

**What happened? What is being done? When will the problem be corrected?**
On 9/29/15, the City's analyst collected 13 routine distribution system samples and delivered them to the City's state-certified laboratory for analysis. The next day (9/30/15), one sample (a public restroom sink) was positive for Total coliform. Per procedure, staff resampled the tap in question, collected a sample from an additional tap within the facility and collected an upstream and downstream sample. In accordance with state and federal regulations, the upstream and downstream samples were within 5 metered connections of the positive coliform sample site. On 10/1/15, lab staff reported that the initial sample was again positive; however all the other samples – including the upstream and downstream sites - were negative. City staff spoke with the management at the facility regarding proper cleaning disinfection techniques to be used at the restroom sink. Once the disinfection process was completed, the analyst collected a follow-up sample at the restroom sink – which was negative on 10/2/15. Since this issue, the facility has followed appropriate disinfection procedures and all weekly and monthly samples collected have been negative since October 2, 2015. We have however implemented an additional check-list to ensure that all samples are collected as specified in the future. There have been no other positive samples in the system since this incident.

*Please note:* Testing for Total Coliform is conducted weekly throughout the City's distribution system at locations approved by the State as representative of the City's system. Total coliforms are a group of related bacteria that are (with few exceptions) not harmful to humans. EPA considers total coliforms to be a useful indicator of the potential presence of pathogens in drinking water and provide a general indication of the sanitary condition of the system. They are naturally found in the environment and include bacteria that are found in the soil, in water that has been influenced by surface water and in human or animal waste.

The Public Water Supply Section of the NC Department of Environmental Quality issued Notice of Violation to the City of Durham for failure to collect repeat samples on the upstream and downstream sites on 10/1 even though they were negative when first tested on 9/30. Because of the nature of this violation, this is considered a Tier 3 violation which requires notification to the public within one year of the violation awareness date 10/30/15. Therefore, public notice is included with the publication of the annual water quality report.

For more information, please contact:

| | | |
|---|---|---|
| **Responsible Person**<br>Bobby Whisnant, ORC - Williams WTP or<br>Tom Lucas, ORC – Brown WTP | **System Name**<br>City of Durham | **System Address (Street)**<br>1405 Hillandale Rd, Durham NC<br>1615 Infinity Rd, Durham NC |
| **Phone Number**<br>919-560-4348 | **System PWSID #**<br>03-32-010 | **System Address (City, State, Zip)**<br>Durham, NC, 27701 |

**Violation Awareness Date:** October 30, 2015

**Date Notice Distributed:** June 2016 **Method of Distribution:** included in annual Water Quality Report

***Public Notification Certification:***

***The public water system named above hereby affirms that public notification has been provided to its consumers in accordance with all delivery, content, format, and deadline requirements specified in 15A NCAC 18C .1523.***

**Owner/Operator:** Donald F. Greeley (Signature) Donald F. Greeley (Print Name) 6/15/16 (Date)

## Contaminant Group List

**(BA) Total Coliform Bacteria** includes Fecal/*E.coli* bacteria. Testing for Fecal/*E.coli* bacteria is required if repeat samples confirm presence of total coliform.
**(AS) Asbestos** - includes testing for Chrysotile, Amphibole and Total Asbestos.
**(TTHM) - Total Trihalomethanes -** include Chloroform, Bromoform, Bromodichloromethane, and Chlorodibromomethane.
**(TOC) - Total Organic Carbon** - includes testing for Alkalinity, Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC) and Ultraviolet Absorption 254 (UV254). Source water samples must be tested for both TOC and Alkalinity. Treated water samples must be tested for TOC. Source water samples and treated water samples must be collected on the same day.
**(HAA5)- Haloacetic Acids** - include Monochloroacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Monobromoacetic Acid, Dibromoacetic Acid.
**(BB) Bromate/Bromide** – includes testing for Bromate and/or Bromide.
**(CD) Chlorine Dioxide/Chlorite** – includes testing for Chlorine Dioxide and/or Chlorite.
**(IC) Inorganic chemicals** - includes Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cyanide, Fluoride, Iron, Manganese, Mercury, Nickel, pH, Selenium, Sodium, Sulfate, and Thallium.
**(LC) Lead and copper** are tested by collecting one sample and testing that sample for both lead and copper.
**(NT) Nitrate/ (NI) Nitrite** – includes testing for nitrate and/or nitrite.
**(RA) Radionuclides** - includes Gross Alpha, Radon, Uranium, Combined Radium, Radium 226, Radium 228, Gross Beta, Tritium, Strontium 89, Strontium 90, Iodine 131, and Cesium 134.
**(SOC) – Synthetic Organic Chemicals/Pesticides** - SOC's are commonly used in industrial and manufacturing processes. SOC's include 2,4-D, 2,4,5-TP (Silvex), 3-Hydroxycarbofuran, Alachlor, Aldicarb, Aldicarb Sulfone, Aldicarb Sulfoxide, Aldrin, Atrazine, Benzo(a)pyrene, Butachlor, Carbaryl, Carbofuran, Chlordane, Dalapon, Dieldrin, Di(2-ethylhexyl)adipate, Di(2-ethylhexyl)phthalate, Dibromochloropropane (DBCP), Dicamba, Dinoseb, Endrin, Ethylene dibromide (EDB), Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methomyl, Metolachlor, Methoxychlor, Metribuzin, Oxamyl(vydate), PCBs, Propachlor, Pentachlorophenol, Picloram, Simazine, Toxaphene.
**(VOC) - Volatile Organic Chemicals**, - VOCs are commonly used in industrial and manufacturing processes. VOCs include p-Isopropyltoluene, Chloromethane, Dichlorodifluoromethane, Bromomethane, Chloroethane, Fluorotrichloromethane, Hexachlorobutadiene, Naphthalene, 1,2,4-Trichlorobenzene, Cis-1,2-Dichloroethylene, Dibromomethane, 1,1-Dichloropropene, 1,3-Dichloropropane, 1,3-Dichloropropene, 1,2,3-Trichloropropane, 2,2-Dichloropropane, 1,2,4-Trimethylbenzene, 1,2,3-Trichlorobenzene, n-Butylbenzene, 1,3,5-Trimethylbenzene, Tert-Butylbenzene, Sec-Butylbenzene, Bromochloromethane, Chloroform, Bromoform, Bromodichloromethane, Chlorodibromomethane, Xylenes (Total), Dichloromethane, o-Chlorotoluene, p-Chlorotoluene, m-Dichlorobenzene, o-Dichlorobenzene, p-Dichlorobenzene, Vinyl Chloride, 1,1,-Dichloroethylene, 1,1-Dichloroethane, Trans-1,2,-Dichloroethylene, 1,2-Dichloroethane, 1,1,1-Trichloroethane, Carbon Tetrachloride, 1,2-Dichloropropane, Trichloroethylene, 1,1,2-Trichloroethane, 1,1,1,2-Tetrachloroethane, Tetrachloroethylene, 1, 1,2,2-Tetrachloroethane, Chlorobenzene, Benzene, Toluene, Ethylbenzene, Bromobenzene, Isopropylbenzene, Styrene, and n-Propylbenzene.

## Instructions for Completing the Notice/Certification Form & for Performing Public Notice for Tier 3 Monitoring Violations

1. **Complete ALL the missing information on the "Notice to the Public."** (Note: Under the section of the notice entitled "What Happened? What is being done? When will the problem be corrected?" describe corrective actions you took or are taking. You may choose the appropriate language below, or develop your own:
   - We have since taken the required samples, as described in the last column of the table above. The sample results showed we are meeting drinking water standards.
   - We have since taken the required samples, as described in the last column of the table above. The sample for coliform bacteria exceeded the limit. [Describe corrective action; use information from public notice prepared for violating the limit.]
   - We plan to take the required samples soon, as described in the last column of the table above.)

2. **Provide public notification to your customers within 12 months after you learn of the violation as follows:**

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| **Community systems** must use one of the following:<br>• Hand or direct delivery<br>• Mail, as a separate notice or included with the bill<br><br>**For community systems**, this notice is appropriate for insertion in an annual notice or the Consumer Confidence Report (CCR), as long as public notification timing and delivery requirements are met (C.F.R. 141.204(d)). | **Non-community** systems must use one of the following:<br>• Posting in conspicuous locations<br>• Hand delivery<br>• Mail<br>**For non-community systems**, if you post the notice, it must remain posted as long as the violation or situation persists; in no case should the notice be posted less than 7 days, even if the violation is resolved. (C.F.R. 141.204(b)). |
| (Note: **Both** community and non-community systems must use *another* method reasonably calculated to reach others **IF** they would not be reached by one of the required methods listed above (C.F.R. 141.204(c)). Such methods could include newspapers, e-mail, or delivery to community organizations. | |

- **Both sides of this public notice/certification MUST be delivered to the persons served by the water system** in order for your customers to have access to the required **Contaminant Group List.**
- If you mail, post, or hand deliver, print your notice on letterhead, if available.
- Notify new billing customers or units prior to or at the time their service begins.
- Provide multi-lingual notifications if 30% of the residents served are non-English speaking.
- Repeat the notice quarterly for as long as the violation exists.
- Should you decide not to use this enclosed notice and develop your own version instead, the mandatory language in ***bold italics*** may not be altered and you MUST include the ten required elements listed in C.F.R. 141.205.

3. **After issuing the "Notice to the Public" to your customers, sign and date the "Publication Notification Certification" at the bottom of the notice. Mail the completed public notice/certification form to the Public Water Supply Section, ATTN: Public Notification Rule Manager, 1634 Mail Service Center, Raleigh, NC 27699-1634 within ten days after issuing the notice (C.F.R. 141.31(d)). Keep a copy for your files.**